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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-162847

(43)Date of publication of application : 18.06.1999

51)Int.Cl. H01L 21/20
H01L 33/00

21)Application number : 09-306215

22)Date of filing : 07.11.1997

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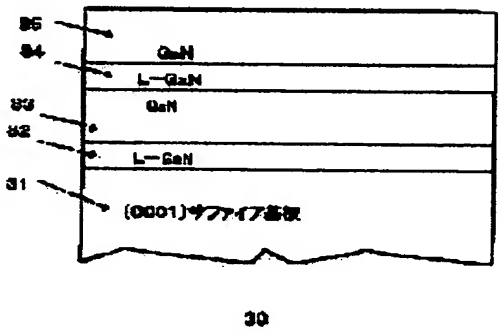
54) SEMICONDUCTOR SUBSTRATE AND FORMATION THEREOF

57)Abstract:

PROBLEM TO BE SOLVED: To prevent deterioration of quality accompanying picking of exposure substrate with a low crystal defect density from a growing furnace by allowing a III group nitride semiconductor to grow on a III group nitride semiconductor substrate or different types of substrates made of sapphire, etc., and crystallizing a low-temperature deposition thin film.

SOLUTION: A III group nitride semiconductor substrate or a sapphire substrate 11 is placed on the heating part in an organic metallic compound vapor- phase growth device, and after a nitrogen in the device is displaced with hydrogen, ammonium and a trimethyl aluminum are supplied to deposit a first low-temperature deposition buffer thin film 32. Next, the thin film 32 is changed to single crystal and a first single crystal GaN thin film 33 is grown thereon, and then a thin film 4 containing Ga and nitrogen is deposited. Further, a GaN thin film is subject to single crystal growth on the thin film 34 so as to form a second single crystal GaN thin film 35. Therefore, an exposure substrate with a low density of crystal defect can be obtained and the deterioration of quality be prevented.



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Date of request for examination]

Date of sending the examiner's decision of ejection]

Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]